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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RIVERO, ALEJANDRO

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,935	Applicant(s) NISHIO, AKIHIKO	
	Examiner ALEJANDRO RIVERO	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Response to Arguments

1. Claims 1-12 have been previously canceled. Claims 13-26 are pending in the present application. Claims 13 and 25 have been amended (04/14/2008).

2. Applicant's arguments with respect to claims 13-26 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues, with respect to independent claims 13 and 25, that the prior art cited in the previous Office Action fails to disclose determining a "position of a feedback information carrier, within a plurality of carriers, in accordance with the reception qualities of the carriers". Claims 13 and 25 recite determining a "position of a feedback information carrier among positions of said plurality of carriers ~~number~~ in accordance with the measured reception quality". All the limitations, including the new limitations, have been addressed below, with respect to newly cited prior art.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 13-17 and 20-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al. (US 2002/0119781 A1).

Consider claim 13, Li et al. disclose a multicarrier communication apparatus that controls transmission to a communicating station based on feedback information from

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said communicating station (paragraphs [0023]-[0025] where Li et al. disclose a base station selecting a subcarrier for a subscriber based on feedback from the subscriber), the apparatus comprising a reception section that receives a multicarrier signal with data mapped on a plurality of carriers (paragraphs [0023]-[0028], [0036]-[0043], [0080]-[0087], element 1305 of figure 13, where Li et al. disclose a base station receiving feedback information including information about favorable coding/modulation rates and subcarriers), a measuring section that measures reception quality (good performance, SINR) of said plurality of carriers (paragraphs [0023]-[0028], [0108]-[0113], where Li et al. disclose measuring SINR, determining a favorable subcarrier based on SINR as compared to a threshold and also based on load information, in order to ensure good performance), and a determining section that determines a position (order) of a feedback information carrier among positions of said plurality of carriers in accordance with the measured reception quality (paragraphs [0023]-[0027] where Li et al. disclose ordering and assigning the subcarriers based on performance).

Consider claims 23 and 24, Li et al. disclose all the limitations as applied to claim 13 above and also disclose a base station apparatus and a mobile station apparatus comprising the multicarrier communication apparatus (paragraphs [0023]-[0028], [0108]-[0113], where Li et al. disclose measuring SINR, determining a favorable subcarrier based on SINR as compared to a threshold and also based on load information, in order to ensure good performance).

Consider claim 25, Li et al. disclose a feedback information communication method used in a communication system that controls transmission to a communicating

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station based on feedback information from said communicating station (paragraphs [0023]-[0025] where Li et al. disclose selecting a subcarrier for a subscriber based on feedback from the subscriber), the method comprising the steps of receiving a multicarrier signal with data mapped on a plurality of carriers from said communicating station (paragraphs [0023]-[0028], [0036]-[0043], [0080]-[0087], element 1305 of figure 13, where Li et al. disclose a receiving, from subscribers, feedback information including information about favorable coding/modulation rates and subcarriers), measuring reception quality of said plurality of carriers (paragraphs [0023]-[0028], [0108]-[0113], where Li et al. disclose measuring SINR, determining a favorable subcarrier based on SINR as compared to a threshold and also based on load information, in order to ensure good performance), and determining a position (order) of a feedback information carrier among positions of said plurality of carriers number in accordance with the measured reception quality (paragraphs [0023]-[0027] where Li et al. disclose ordering and assigning the subcarriers based on performance).

Consider claims 14 and 26, Li et al. disclose all the limitations as applied to claims 13 and 25 above and also disclose wherein said determining section determines a carrier having the best measured reception quality among the plurality of carriers as said feedback information carrier (paragraphs [0023]-[0027] where Li et al. disclose ordering and assigning the subcarriers based on performance).

Consider claim 15, Li et al. disclose all the limitations as applied to claim 14 above and also disclose wherein when there are a plurality of communicating stations, said determining section preferentially assigns the carrier having the best reception

quality to a communicating station having a large amount of data to be transmitted from the subject apparatus and designates said carrier as the feedback information carrier for said communicating station (paragraphs [0023]-[0027], [0040]-[0046], [0054]-[0064], [0080]-[0091], [0096]-[0098], where Li et al. disclose load balancing and selecting those subcarriers with high SINR and low traffic load (higher availability) and assigning subcarriers to subscribers considering amount of traffic requests).

Consider claim 22, Li et al. disclose all the limitations as applied to claim 14 above and also disclose wherein said feedback information includes at least one of a Channel Quality Indicator, an ACK signal, and a NACK signal (paragraphs [0007], [0023]-[0027] where Li et al. disclose that the feedback information includes performance information, hence reads on channel quality indicator, and Li et al. also disclose feedback information is based on a received pilot signal from the base station, hence the feedback information also serves as acknowledgement to the pilot signal).

Consider claim 16, Li et al. disclose all the limitations as applied to claim 14 above and also disclose wherein said determining section determines said feedback information carrier based on a multicarrier signal received immediately before transmitting the feedback information (paragraphs [0007], [0023]-[0027] where Li et al. disclose that the feedback information is based on a previously transmitted pilot signal from the base station).

Consider claims 20 and 21, Li et al. disclose all the limitations as applied to claim 14 above and also disclose a transmission section that transmits feedback information using said feedback information carrier (paragraphs [0007], [0023]-[0027], where Li et

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al. disclose using subcarriers from the uplink access channel) and a spreading section that spreads said feedback information carrier using a predetermined spreading code for feedback information (paragraphs [0023]-[0027], [0048]-[0050], [0092], where Li et al. disclose signal spreading and coding to improve reliability and to protect feedback information).

Consider claim 17, Li et al. disclose all the limitations as applied to claim 14 above and also disclose a transmission section that transmits information about said feedback information carrier, wherein said reception section receives a multicarrier signal with feedback information mapped on said feedback information carrier (paragraphs [0007], [0023]-[0027], where Li et al. disclose using subcarriers from the uplink access channel paragraphs, the feedback information is based on a previously transmitted pilot signal from the base station and the selected subcarriers are transmitted to the subscribers).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. in view of Chen et al. (US 2002/0067701 A1).

Consider claim 18, Li et al. disclose all the limitations as applied to claim 17 above and also disclose calculation section that calculates required transmit power so that the reception quality of said feedback information carrier becomes a required quality (paragraphs [0067]-[0077], where Li et al. disclose a transmit power threshold value for ensuring proper SINR) and wherein said transmission section transmits information about said feedback information carrier (paragraphs [0007], [0023]-[0027], where Li et al. disclose using subcarriers from the uplink access channel paragraphs, the feedback information is based on a previously transmitted pilot signal from the base station and the selected subcarriers are transmitted to the subscribers).

Li et al. do not specify transmitting the calculated required transmit power.

Chen et al. disclose transmitting the calculated required transmit power (paragraphs [0020]-[0021], [0071]-[0077], where Chen et al. disclose transmitting power control commands).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to transmit the calculated required transmit power as taught by Chen et al. in the apparatus of Li et al. in order to perform transmit power control, thus helping maintain an acceptable SINR (as suggested by Li et al. in paragraphs [0023]-[0028],

[0067]-[0077], [0108]-[0113] and as suggested by Chen et al. in paragraphs [0007]-[0013], [0020]-[0021], [0071]-[0077], [0100]-[0108]).

Consider claim 19, Li et al. as modified by Chen et al. disclose all the limitations as applied to claim 18 above and also disclose wherein said calculation section calculates the required transmit power based on a difference between the reception quality (SINR) of said feedback information carrier and said required quality (paragraphs [0067]-[0077] of Li et al., where Li et al. disclose a transmit power threshold value for ensuring proper SINR).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEJANDRO RIVERO whose telephone number is (571)272-2839. The examiner can normally be reached on Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at

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866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alejandro Rivero/
Examiner, Art Unit 2618

/Nay A. Maung/
Supervisory Patent Examiner, Art
Unit 2618